



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

JUL 17 2018

Mr. Peter Thomas
Coaltec Energy USA, Inc.
5749 Coal Drive
Carterville, Illinois 62918

Dear Mr. Thomas:

On January 15, 2018, you sent an email to the U.S. Environmental Protection Agency Region III (EPA), requesting guidance about Clean Air Act (CAA) regulatory requirements for a potential project involving municipal biosolids. Coaltec Energy USA, Inc. (Coaltec) is in early-stage discussions with Allegheny County Sanitation Authority (ALCOSAN) regarding the drying and processing of approximately 110 wet tons of biosolids per day to produce powder activated carbon (biochar). You request EPA's guidance on whether or not your proposed process should be considered solid waste incineration under the Clean Air Act (CAA) Section 129. You state that the units are gasification units, not combustion units (CAA Section 129 provides the statutory authority for EPA to develop regulations for solid waste combustion.). If the process is not considered an incineration unit it would potentially be regulated under CAA Section 112.

We note that EPA has opined on a Coaltec project before. In a previous letter to Coaltec¹, EPA determined that "[o]ur understanding of your system is that the system is tightly controlled through the use of program local controllers to ensure oxygen starved conditions and temperatures which preclude the combustion of the poultry litter or mushroom substrate. If so, the gasifier would not be subject to CAA section 129 standards for commercial/industrial solid waste incinerators (CISWI) because the gasifier will not be combusting solid waste." While the process used to produce biochar from chicken poultry is similar to your proposed process for producing biochar from municipal biosolids, because you are processing a different material (i.e., municipal biosolids), potential applicability under CAA Section 129 must be assessed under Sewage Sludge Incineration (SSI) standards as opposed to CISWI standards. However, for the reasons outlined below, EPA still believes based on the information you provided that your unit is not subject to CAA Section 129 standards.

For the purposes of this project, you define municipal biosolids as "sewage sludge or the solids that are separated during the treatment of municipal waste, including domestic septage."² A single-gasifier system has a footprint of approximately ¼ acre and it is built to operate 24 hours per day, 365

¹ See August 17, 2017 letter from Cristina Fernandez, Director, Air Protection Division to Mike McGolden, President, Coaltec Energy USA, Inc.

² See attachment "Reply to EPA re Section 112 for gasification of municipal biosolids" in March 8, 2018 email from Peter Thomas to Mike Gordon, EPA Region 3.



days per year. Two, three or four gasifiers can be installed side-by-side on ½, ¾ or 1-acre respectively. The gasification systems will always be located on-site (i.e., at the wastewater treatment plant).

As stated above, Coaltec is having early discussions with ALCOSAN regarding the drying and processing of 110 wet tons of their biosolids per day to produce biochar. The biochar would be used on-site by the wastewater treatment plants for absorbing pharmaceuticals, pesticides, and hormones, before being discharged in the plant's effluent. Based on your description of the process, "[t]he 18 to 19 million Btu of waste heat per hour from the closed-loop, refractory-lined, oxygen-starved gasifier / thermal oxidizer dries the 70% to 75% moisture, centrifuged raw sewage sludge in a triple-pass rotary drum dryer at 600 F to 150 F over a 20-minute period, and since the 20% to 25% sewage sludge is then processed through the gasifier at 1,400 to 1,800 F over a period of ~2-hours at ~5,000 pounds per hour, there is no need to lime-stabilize the wet sewage sludge or heat treat it prior to it being augered into either a drum dryer or an auger screw dryer on the front end of our gasification system."³ Since municipal sewage sludge is 70% to 75% moisture after being centrifuged or belt pressed, the majority of the waste heat must be used to dry the sewage sludge to 20% to 25% moisture before it is augered into the gasifier at 5,000 pounds per hour.

As with our letter for your previous project for the gasification of chicken litter, our understanding of this system is that it is carefully monitored and operated through the use of moisture sensors, temperature sensors, and programmable logical controllers (PLC) to ensure oxygen starved conditions and temperatures which preclude combustion. If so, the gasifier would not be subject to CAA 129 standards for SSI units because the gasifier will not be combusting solid waste. It is our understanding that biochar is produced as the hot carbon-rich material from the upper gasification chamber moves into the lower section of the gasifier, where super-heated steam is carefully added to the carbon materials that results in granular activated carbon.

We recognize that the resultant syngas is combusted in the thermal oxidizer in the process you described. However, the SSI rule only applies to sewage sludge, which is defined as "[a] solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge..."⁴ Because the syngas is not a solid, semi-solid, or liquid residue, the SSI rule would not apply to combustion taking place in the thermal oxidizer.

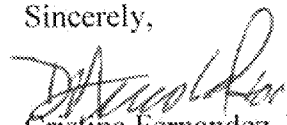
³ See attachment "Reply to EPA re Section 112 for gasification of municipal biosolids" in March 8, 2018 email from Peter Thomas to Mike Gordon, EPA Region 3.

⁴ 40 C.F.R. 60.5250



This guidance is based on the information provided by you and could be subject to change if your process deviates from the description provided to EPA. We also note that this is guidance to you, as the manufacturer of the unit and does not provide a determination of applicability for a site-specific application to a source which may purchase, install and operate the unit. If you have any questions please contact Mike Gordon at 215-814-2039 or by email at gordon.mike@epa.gov.

Sincerely,



Cristina Fernandez, Director
Air Protection Division



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